Unlock the potential of the unconnected with intelligent Dell Edge Gateways.

Dell Edge Gateway 3000 and 5000 Series for the IoT to aggregate, analyze and connect modern and traditional sensors/systems to the cloud.

With companies in every industry on a journey to transform business and create new digital operating models, the Internet of Things (IoT) has become an enabler of change and innovation. With the IoT, you have the opportunity to connect the unconnected and unlock the value of your data — data you already have and newly generated data.

A key challenge in getting real-time pervasive intelligence from connected "things" is some were not meant to be linked to an IoT ecosystem. Dell Edge Gateways are designed to connect both legacy and modern systems with flexible wired and wireless I/O.

Dell Edge Gateways are put through rigorous testing to ensure that they can operate in dirty, dank, and dangerous environments including extreme vibration and wide temperature ranges. They are also purpose built to accommodate a broad array of mounting options such as walls, DIN rails, in vehicles, etc.

Dell's pragmatic approach to the IoT helps customers.
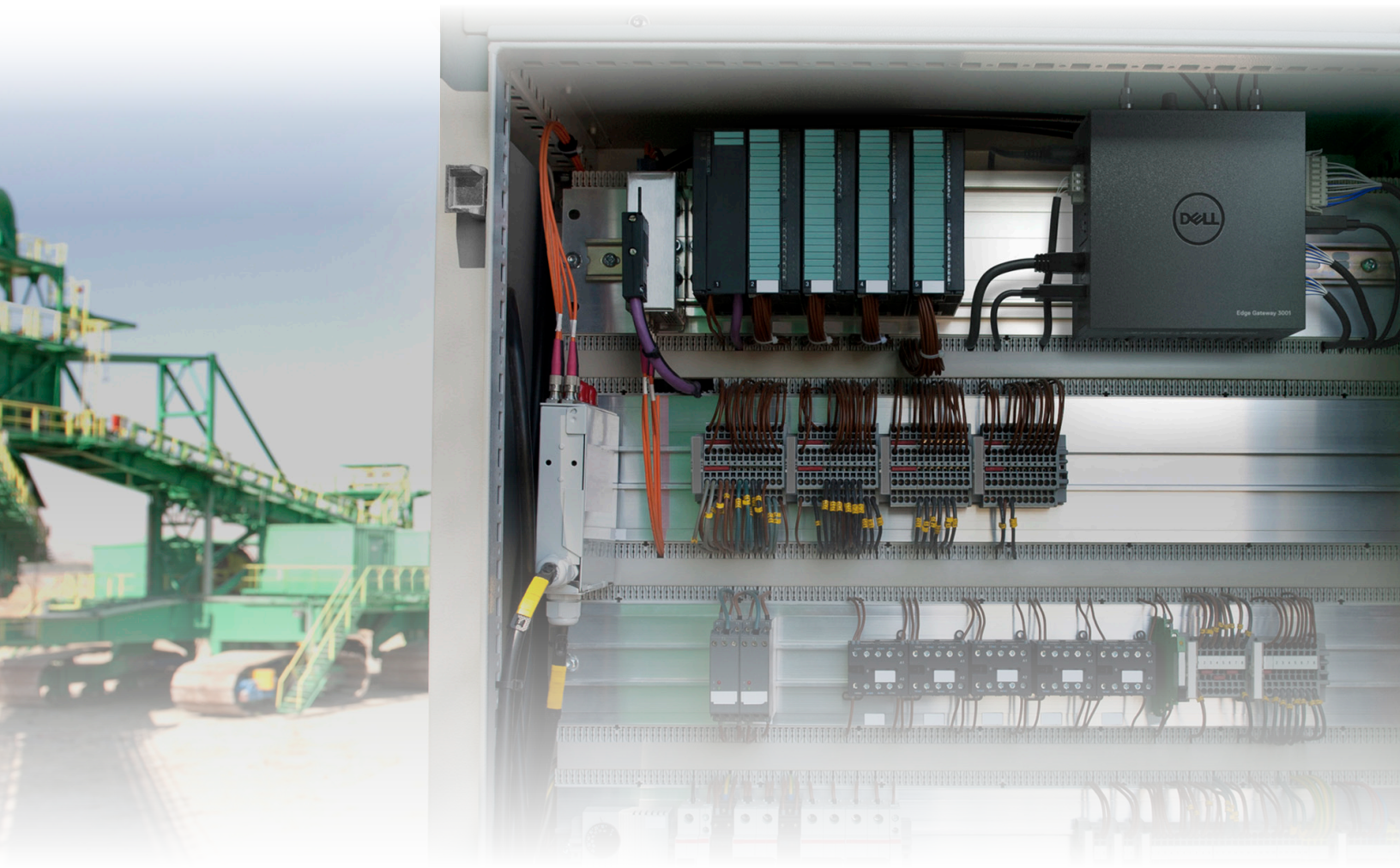
Get to ROI faster with your IoT

Ensure your IoT success and rapid ROI with the industry's broadest Internet of Things infrastructure solutions portfolio and industry-specific expertise through our award-winning curated IoT Solutions Partner Program. Our pragmatic approach enables you to:

· Simplify the complex
· Make your data useful
· Architect for your analytics
· Secure your opportunities
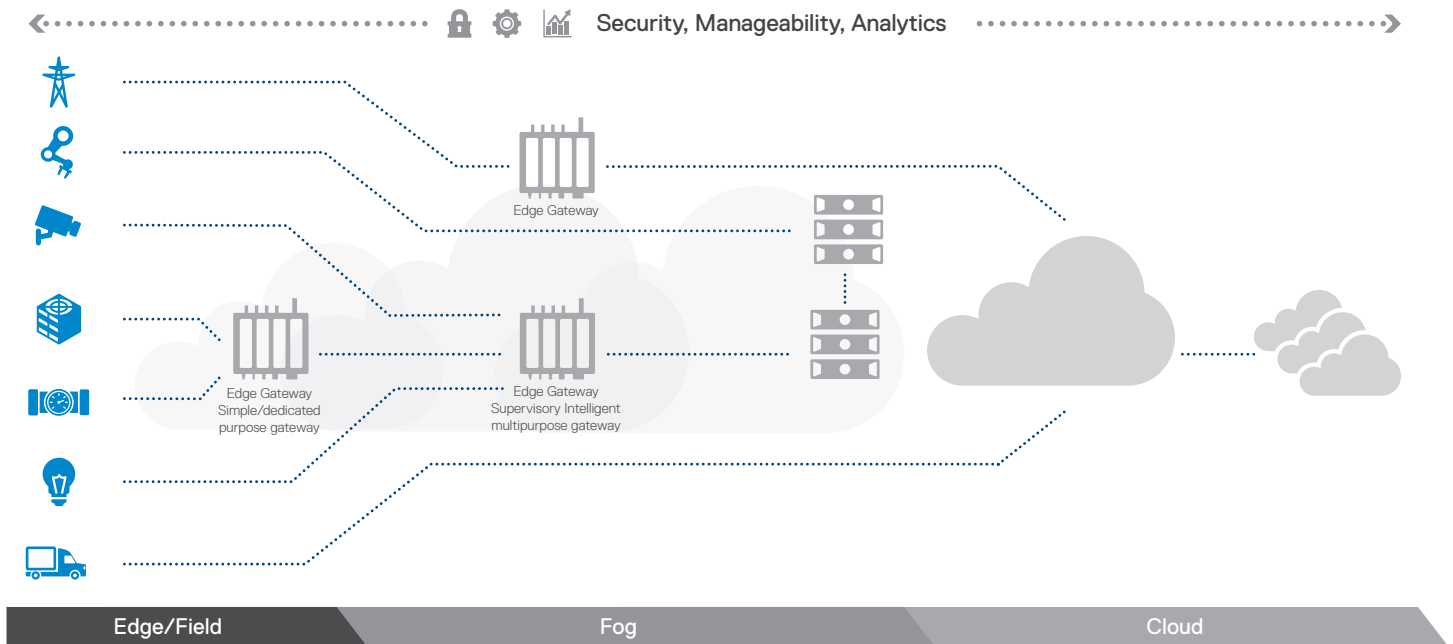
A smart, industrial-grade IoT device

What the IoT needs	Edge Gateway features
1 Security and managability	**Hardware-level security via TPM to protect network endpoints**; User-friendly **Edge Device Manager** to ensure that you can remotely control large volumes of units deployed at the edge
2 Diverse I/O options to connect your "things"	Wide variety of **native wired and wireless I/O plus extension options** to bridge sensors, controllers and industrial equipment to the internet
3 Easy to procure at scale	**A flexible supply chain** that scales from 1 to 1,000s with lead time in weeks
4 High performance in real-world environments	Runs at **full processing capacity at stated temperature specs** with **no external airflow required**; 3000 Series built for low energy needs of **Power over Ethernet** (PoE)
5 Rugged, dependable, long lived	Designed for **24x7 fanless operation in wide temperature ranges** for an extended product lifetime
6 Versatile mounting options	Form factors and mounting options **flexible enough to adapt to any industrial environment** including wall, DIN-rail, Vesa mounts and cable routing accessories

Architecting flexible infrastructure enables faster insights

One-size-fits-all architectures don't work for IoT solutions. A distributed architecture for the IoT gives you flexibility to deploy processing and storage wherever it makes sense for your use case — at the edge near sensors, the "fog" of intelligent devices between sensors and cloud, or the cloud and data center. Edge analytics enable automated compression and cleansing of data at the network edge so you keep only the data you need. Utilizing compute at the edge also improves security as sensitive data can be kept on protected devices and reduces the amount of data you needed to send over cellular networks for remote devices.

Smart infrastructure enables efficient enterprise IoT

Security, Manageability, Analytics

Edge Gateway

Edge Gateway
Simple/dedicated
purpose gateway

Edge Gateway
Supervisory Intelligent
multipurpose gateway

| Edge/Field | Fog | Cloud |

Dell Edge Gateways unlock the value of both existing and new data by giving you the power to securely connect any endpoint to the network and architect for analytics throughout the IoT ecosystem.

Flexible, affordable, network-friendly gateways

Instead of taking up bandwidth and wasting money transmitting unnecessary data, Dell Edge Gateways powered by Intel® Atom® processors have the capacity to perform analytics close to devices and sensors, sending only meaningful data to the cloud or data center.

The Dell Edge Gateway portfolio is comprised of the Edge Gateway 5000 series and Edge Gateway 3000 series. The 5000 series is a modular workhorse optimized for fixed applications with a more powerful Atom processor and expansive I/O for greater headroom for current and future use cases. The 3000 series is the small and mighty gateway optimized for dedicated mobile/field applications offering rightsized I/O and computing capabilities to get the job done in a small package with limited power consumption.

Edge Gateway 3000 Series

Edge Gateway 3001
General-purpose automation

Edge Gateway 3002
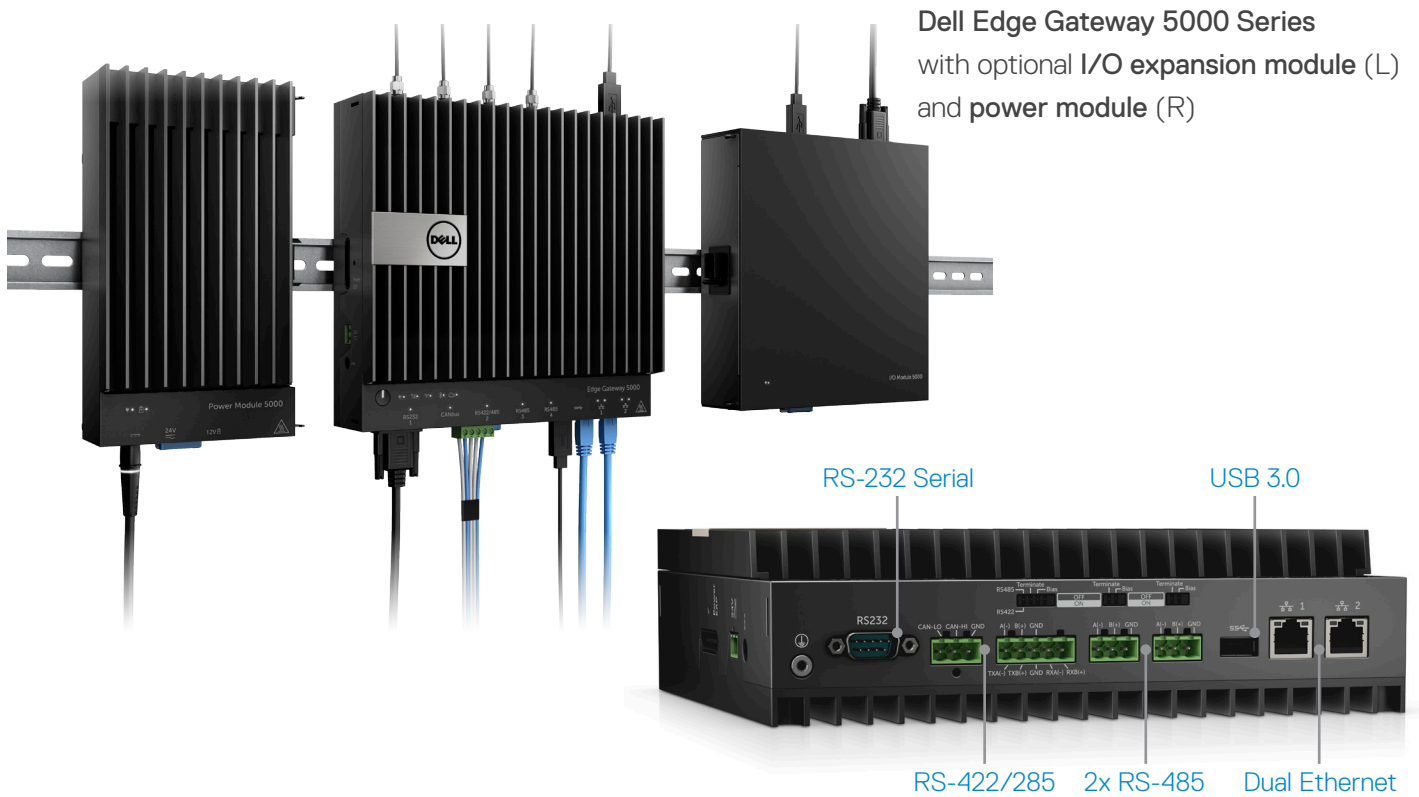Transportation/Logistics

Edge Gateway 3003
Media/Retail kiosks

The 3000 Series delivers single-application processing power, focused I/O and connectivity in a compact package for the unique needs of challenging mobile and field applications:

Form factor	Smaller form factor, starting at 1.9 kg
Embedded Sensors	GPS, accelerometer and atmospheric pressure sensors; support for MEMS
Environmental	Operating temperatures -30°C to 70°C; relative humidity 5% to 95% non-condensing; withstands high shock and vibration
Options	Optional 3G or 4G LTE available for specific countries
Power requirements	Low power requirement of 7 watts and flexibility of DC or POE
Operating systems	Ubuntu Core 16 Win 10 IoT Enterprise LTSB

Edge Gateway 3001	Edge Gateway 3002	Edge Gateway 3003
General-purpose automation	Transportation/Logistics	Media/Retail kiosks
• Serial Interfaces: 2x-RS232/422/485 • Multi Function IO connection (0-5V, 8 channel, independently programmable, DAC, ADC, GPIO)	• Main port supports PoE (15.4W) • Wireless PAN: Bluetooth LE and integrated zigbee module for mesh networking • CANbus	• Main port supports PoE (15.4W) • Video: DisplayPort 1.1; daisy-chaining of displays not supported • Audio: Line-in, Line-out

Edge Gateway 5000 Series

Dell Edge Gateway 5000 Series
with optional **I/O expansion module** (L)
and **power module** (R)

RS-232 Serial

USB 3.0

RS-422/285   2x RS-485   Dual Ethernet

The 5000 Series is a modular workhorse designed and purpose built to aggregate, secure and relay data from diverse sensors and equipment in extreme environments.

Form factor	Optimized for wall and DIN-rail mounting
I/O	Dual Independent Gigabit Ethernet (RJ-45). USB: 2x USB2, 1x USB3. Serial Interfaces: 1xRS-232, 2xRS-485, 1xRS-422/485 zigbee dongle (optional) CANbus (optional) Wi-Fi 802.11n+Bluetooth (optional) Mobile Broadband 3G/LTE (optional)
Environmental	Fanless design for industrial conditions including 24x7 duty cycles and long life Operating temperature: 0°C to 50°C for the commercial model 5000; -30°C to 70°C for the industrial model 5100; relative humidity 5% to 95% non-condensing
Optional accessories	Expansion power module I/O-expansion module
Power requirements	The 5000 Series can be powered by 24V DC direct power or 24V AC/DC adapters.
Operating systems	Ubuntu Core 16 Win 10 IoT Enterprise LTSB

Dell Edge Gateways in action

Dell Edge Gateways can aggregate single-application data to multi-application data, and both series work in conjunction to provide capabilities lacking in today's harsh environments. In addition to USB and Ethernet, Dell Edge Gateways support wireless technologies like WiFi and BLE. The inclusion of cellular capabilities allows connectivity in applications where you want redundancy or need a completely isolated network, or in remote locations where connectivity is a challenge.

Manufacturing and industrial
Dell Edge Gateways integrate data and automate real-time responses for a wide variety of sensor and equipment data for the factory floor, manufacturing control and other industrial IoT applications.

Edge Gateway 3001: Intel Atom processor, 3 USB interfaces and 4 BIOS-controlled serial ports provide analysis of sensor data to predict equipment failures and increase uptime while minimizing costs.

Edge Gateway 5000: Native, programmable serial ports like RS-485 allow Modbus RTS and BACnet MSTP protocols for equipment management such as shop floor machines and remote industrial equipment.

Energy
Rugged Dell Edge Gateways provide edge computing for oil & gas and petrochemical; energy grids; wind energy; water & waste management; smart cities; and more.

Edge Gateway 3001: Small footprint, low power consumption, and flexible connectivity including serial ports provides and ideal computing solution for remote energy and operational assets.

Edge Gateway 5100: Allows deployment in extreme temperatures up to 70°C, a requirement of many oil & gas and energy management use cases.

Transportation and logistics
Designed to be compact with versatile mounting and flexible power options, Edge gateways connect fleets and supply chains and enable asset tracking, fleet management, cold chain logistics, and regulatory compliance.

Edge Gateway 3002: Integrated GPS; wide power input; accelerometer; atmospheric pressure sensors; WiFi/BLE; CAN bus; integrated ZigBee protocols and optional antenna; complies with most marine, rail, vehicle and aircraft certification requirements.

Edge Gateway 5100: Optional CAN bus card meets stringent temperature specifications (-30°C to 70°C) for deployment in extreme environments.

Building Automation
With diverse integrated I/O the 5000 series and 3001 are ideal for connecting HVAC, lighting, security systems to enable facilities managers to save energy and improve tenant comfort.

Edge Gateway 3001: Integrated Serial ports enable Modbus, BACnet, and other protocol support to connect building infrastructure and diverse wirelsss connectivity ensure that facilities managers can access the critical data.

Edge Gateway 5000: Optimized as a supervisory building controller with expansive I/O and computing headroom to manage diverse building management workloads.

Dell IoT Solutions Partner Program

Dell created the award-winning IoT Solutions Partner Program to advance IoT solutions by bringing together innovative technology and service providers. The Dell IoT Solutions Partner Program can help you navigate the fragmented IoT landscape to build end-to-end solutions. Learn more at **Delliotpartners.com**

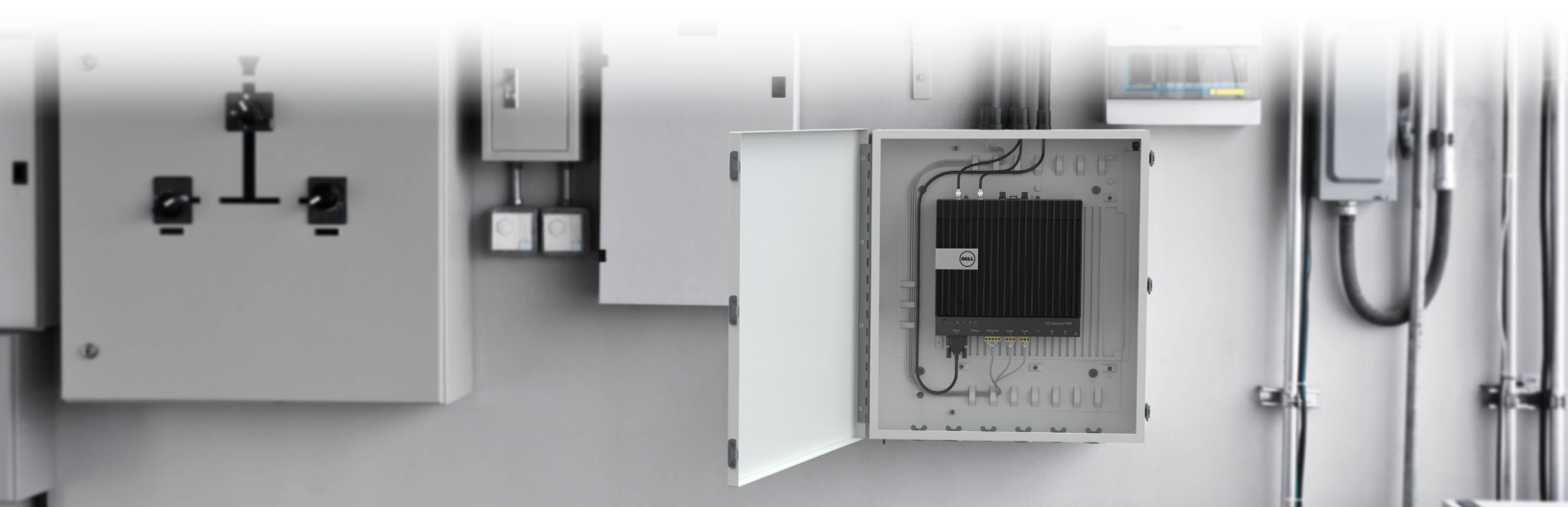## Ecosystem of technology and service providers

The true value of the IoT is for specific use cases, which can often apply across multiple industries and application program interfaces (APIs). While some companies claim they can cover every vertical and use case alone with their solutions, Dell addresses specific use case needs in conjunction with our curated IoT Solution Partners to enable the end-to-end, open API solutions you need, from the edge of the network to the data center. To assist you with rapid, successful deployment of IoT solutions, Dell combines utilizes our best-in-class infrastructure solutions and with curated value-add from our technology and services partners to create validated use-case solution briefs, blueprints, reference architectures and implementation guides.

Security and manageability — protecting your network with Dell

Securing your edge network begins with deploying secure edge gateways. Dell Edge Gateways utilize proven IT security tools to address common IoT security concerns, including a Trusted Platform Module (TPM) chip for hardware root of trust, Secure Boot and BIOS-level lockdown of unused I/O ports. Gateways include chassis intrusion connectors, which can be linked through our management tools to send automatic alerts. We enable you to remotely provision and manage your edge gateways and also deploy operating system and security updates through our tools like Dell Command Suite and Dell Edge Device Manager (EDM).

Service and warranty solutions

Let Dell streamline deployment and support so you can focus on what you do best — innovate. Edge Gateways are supported throughout the product lifecycle by our comprehensive service and warranty solutions, including Deployment Services, Basic Hardware Support or Dell ProSupport. Edge Gateways feature a limited basic hardware warranty with mail-in service for one year, with the option to extend up to five years. Optional Dell ProSupport can be extended for five years, and for most regions, provides next-day, on-site service or Advanced Exchange (for 3000 Series) after remote diagnosis. Dell also offers optional SupportAssist (available for Win10), which leverages the IoT to automatically predict and manage your services.

Dell OEM Solutions

Dell OEM Solutions' ability to seamlessly design, build, deliver and support full OEM solutions around the world gives our customers a competitive advantage in an increasingly fragmented industry. Talk to your account executive or visit **Dell.com/OEM**.

Dell Financial Services

As a wholly owned subsidiary in the U.S., Canada and many countries in Europe, Dell Financial Services is a full-service finance company that annually funds approximately US$6 billion of IT equipment for Dell customers across consumer and commercial business segments. Our OEM IoT customers can often extend Dell financing to their own customers when systems qualify. Dell Financial Services offers low rates on Dell Technologies equipment, financing for Dell, VMware and any other IT vendor's technology. Leasing and finance terms subject to product availability, credit approval, execution of documentation provided by and acceptable to Dell Financial Services.

Start small. Build fast. Connect what matters.

Find out how Dell Edge Gateways can help you unlock the potential of the unconnected and accelerate the return on your IoT investment.

Dell.com/IoTedge

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